

tions of cadmium, mercury, strontium and tantalum in a variety of media.

Linda Ham will continue work on the Eastern Shore Compilation project. The objective of this project is to produce a comprehensive knowledge base for gold occurrences along the Eastern Shore. The project has two parts: (1) to capture in digital form all available geological information and produce new interpretive bedrock geology maps, and (2) to complete comprehensive reports on selected gold districts. Linda is responsible for the first part of the project; Paul Smith of the Resource Assessment Section is responsible for the second part. In 2002-03, Linda plans to complete open file maps for NTS areas 11F/03, 11F/04, 11F/05 and 11F/06, and to begin work on 11D/10 through 11D/15, 11E/02 and 11E/03.

This year, Rick Horne will again work with Chris White on the Southwest Nova bedrock mapping project (see next paragraph). He will also continue to investigate the structural geology of the Meguma Group in the Wittenburg Mountain-Rawdon area. Rick plans to continue structural investigations of the Dufferin gold deposit, pending underground access, and will begin a new project to document the geology of the Oldham gold deposit.

Chris White and Rick Horne will complete the final full year of field work for the Southwest Nova bedrock mapping project. This project will produce 1:50 000 scale geology maps for all or parts of the 12 NTS areas that underlie Digby, Yarmouth and Shelburne counties. This year, field work will focus on NTS map area 20P/12. A preliminary map of the area will be released at Mining Matters in October 2002, and a preliminary map of the entire project area is planned for release in March 2003. Chris will also contribute to the bedrock mapping component of the TGI project, where he will focus on pre-Carboniferous rocks in the Creignish Hills and North Mountain areas of NTS 11F/14, and on rocks adjacent to the Chedabucto Fault.

The Resource Assessment Section, managed by Bob Ryan, will carry out a program of new and continuing field work, and preparation of maps and

reports for publication.

John Calder will continue studies (including paleoecology, source rock characteristics and thermal maturation) of organic deposits and their host sedimentary basins in support of coal and hydrocarbon exploration and development. This year's activities include participation with Rob Naylor in a collaborative project with Nova Scotia Power Inc., Canadian Clean Power Coalition and Natural Resources Canada to assess the potential of Nova Scotia coal fields to produce coalbed methane and serve as a repository for CO₂. John will also spend considerable time in his capacity as Chairman of the Scientific Subcommittee to develop the application for designation of the fossil cliffs at Joggins as a UNESCO World Heritage Site.

Garth DeMont will continue to develop the mineral deposit inventory for Cape Breton Island. In the 2002 field season, Garth will concentrate on the TGI project area (NTS 11F/11 and 11F/14) so that a complete mineral inventory for the area can be released as part of the final TGI project publication.

Phil Finck will spend much of his time responding to questions and requests for information about industrial mineral commodities from local entrepreneurs and companies, and explorationists from around the world. In addition, Phil plans to undertake field and laboratory studies of magnesium resources (with Mike MacDonald and Garth DeMont), and to update the department's 1998 publication on secondary processing of industrial minerals.

Dan Kontak will complete reports for several current projects, including studies of the metallogeny of basement rocks in Cape Breton Island (Stirling, Coxheath and Lime Hill deposits), the metallogeny of Carboniferous rocks (Walton, Brookfield, Lake Ainslie and Lake Enon deposits), pegmatites and related lithophile mineralization in southwestern Nova Scotia, vein textures of Meguma gold deposits, and the geology and petrology of zeolite-bearing North Mountain basalts. Dan will also contribute time as co-host of an international conference on fluid inclusions that will be held at St. Francis Xavier University in July.

Ron Mills will focus on assisting prospectors through consultations, training and visits to properties throughout the province. Ron will also assume responsibility for the Drillholes Database, which formerly resided in the Stellarton Core Facility, and will be part of a division workgroup that is developing new procedures for delivery of services at the Core Library.

George O'Reilly will continue his work on the mineral deposit inventory. Limited field work will include visits to mineral occurrences in the Southwest Nova bedrock mapping project area (see above), and work to confirm information compiled for the Eastern Shore and occurrences of Fe-oxide-Cu-Co-Au in the Cobequid - Chedabucto Fault Zone of north-central Nova Scotia. George plans to release a new version of the Mineral Deposits Inventory in October, and will begin to investigate ways to modernize the database's software platform and search capabilities.

Garth Prime will continue field and laboratory work to investigate aggregate resources in the Annapolis Valley. A GIS-based aggregate resource map for Digby County should be completed by year-end. Garth will also begin field mapping and sampling to evaluate potential sites for a bedrock aggregate quarry in the Upper Tantallon/Timberlea area, to identify new sources of aggregate for the rapidly growing Halifax metropolitan area.

Paul Smith will focus on completing current work commitments in 2002-03. Paul will contribute to final publications from a multi-disciplinary study of mercury in the Kejimikujik Lake area, which has operated for the past three years with funding from Health Canada's Toxic Substances Research Initiative. Paul's involvement in this project has led to collaboration with Terry Goodwin to investigate how to discriminate between natural and anthropogenic concentrations of a variety of metals in waters, soils, plants and animals in several areas of Nova Scotia. Paul will continue to work with Linda Ham on the Eastern Shore Compilation project, and will complete comprehensive reports on many gold deposits in the project area. Additional information about the project is contained in the summary of Linda's planned activities.

Mike Cherry

Fundy Geological Museum Plans to Expand

The Fundy Geological Museum's 10th anniversary is only a year away, and staff at the Parrsboro museum are already anticipating the next decade by announcing expansion plans. "We have a problem," Director Ken Adams explains with a smile, "We've been too successful!" After nine years in operation, the museum is bursting at the seams with a growing collection of rocks, minerals and fossils, attendance of well over 23,000 annually, increasing demand for its immensely popular school and public programs, and up to 20 staff members to serve the public.

Museum staff expect a significant increase in visitation over the next few years as a result of the efforts of the Joggins World Heritage Site Committee, the growing popularity of Cape Chignecto Provincial Park, and the success of the Bay of Fundy Product Club. Expansion plans include an auditorium and additional space for public programs, retail space, and 1,500 square feet for travelling exhibits to help meet this demand. The museum will also increase access to its collection through digitization for public access computers and the World Wide Web.

The museum boasts a collection of more than 5,000 specimens, including native zeolites, agate, amethyst and economic minerals. The minerals section received a big boost when Mount Allison University's Geology Department donated their teaching collection. Approximately 25% of the museum collection is made up of fossils from the Cambrian to Tertiary periods. The Carboniferous period is particularly well-represented with plant and animal specimens from Joggins and Parrsboro. This collection also expanded recently with the donation of the personal collection of Dr. Laing Ferguson. Carrs Brook, N.S., is the source of some of the oldest known Triassic fossils in eastern North America and some of these are now on display at the museum. This collection is the result of countless hours of volunteer support by Eric Leighton.

The museum is also well-known

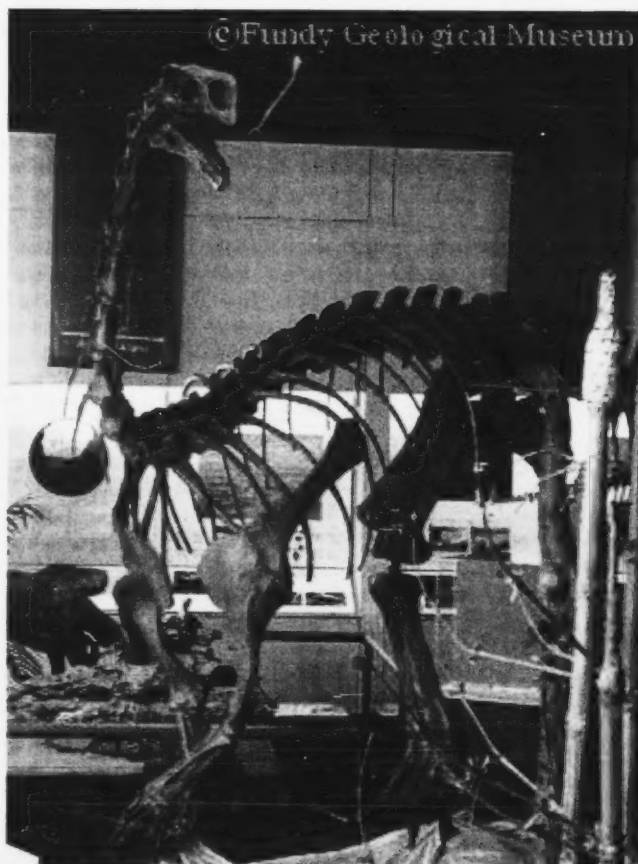
for its collection of 200 million year old Prosauropod dinosaurs from the Jurassic Period. Project Prosauropod began in July 2000 with a two week excavation at Wasson Bluff, N.S. The project involves preparation and study of the most complete of six individual dinosaur skeletons collected by staff and volunteers of the Nova Scotia Museum, and researchers at Columbia University. The skull, a key factor in identification, makes this specimen particularly important, as Prosauropod skulls are very fragile and rarely survive long enough to become fossilized. Through Project Prosauropod, lab workers have developed an extensive web site with weekly updates on their progress. You can check out the Project Prosauropod page

at <http://museum.gov.ns.ca/fgm/lab/lab.html>. Virtual visitors and people visiting the museum can watch the fossil preparation work, and can even follow the work at a microscopic level.

Prompted by increased demand for learning vacations and growth in ecotourism, staff have built on their successful school programs with similar day packages for other groups and summer visitors. Summer visitors can dig into learning with both hands at the museum, and walk back in time with museum guides.

For information on the museum and its public programs, visit our web site at <http://museum.gov.ns.ca/fgm/index.html> or give us a call at 902-254-3814.

Kathy Goodwin
Fundy Geological Museum



Reconstruction of a Jurassic Prosauropod dinosaur at the Fundy Geological Museum.

Nova Scotia Minerals Update



Department of Natural Resources, Minerals and Energy Branch

Volume 19, no. 2

Spring 2002

In This Issue

Geological Mapping, Geochemistry, and Resource Assessment in 2002-2003

Fundy Geological Museum Plans to Expand

Exploration and Development Highlights for 2001

From the Mineral Inventory Files

Professional Status for Geoscientists

January-March Open Assessment Reports

NSPA Plans Field Trip to the Cobequid Highlands

PDAC 2002

Solely Energy for the Mining Society Annual Meeting in Baddeck

Special Note/Dates to Remember

Comments or questions? Please contact:

Doug MacDonald
Editor, *Nova Scotia Minerals Update*



Minerals and Energy Branch
P.O. Box 698, Halifax
Nova Scotia, Canada B3J 2T9
Phone 902-424-2510
E-mail drmacdon@gov.ns.ca
Minerals Update Web Site:
<http://www.gov.ns.ca/natr/meb>



Printed on paper that
contains recycled fibre

Geological Mapping, Geochemistry, and Resource Assessment in 2002-2003

The Mineral and Energy Resources Division will undertake a diverse program of field- and office-based activities in support of the mandate of the Department of Natural Resources in 2002-03. Highlights of the division's mapping, geochemistry, and resource assessment activities are summarized below. Activities of the Geoscience Information Services Section will be highlighted in the Summer 2002 issue.

The Geological Mapping and Geochemistry Section, managed by Bob Boehner, will concentrate on completing a number of current projects. The most significant of these is DNR's collaborative project with Natural Resources Canada in south-central Cape Breton Island, which is funded in part by the federal government's Targeted Geoscience Initiative (TGI).

Ralph Stea will work with Susan Pullan of the Geological Survey of Canada and Mary Feetham to complete the surficial geology component of the TGI project. Ralph will undertake field work required to complete 1:50 000 scale surficial geology maps of NTS areas 11F/11 and 11F/14, and will collaborate in the interpretation of results of the shallow seismic surveys and overburden drilling activities done by Susan and Mary. Ralph and Mary will work with local Economic Development Agencies and the Nova Scotia College of Art and Design to investigate potential uses of earthenware clay deposits discovered during surficial mapping in 2000 and 2001.

Mary Feetham will complete her investigation of a variety of drill data for the TGI project. This includes compilation and interpretation of data from water wells and diamond-drill holes in

the project area, and compilation and interpretation of data from overburden drilling done under Mary's direction. Mary will also assist Susan Pullan in acquisition and interpretation of new data from Susan's shallow seismic surveys, and will work with Ralph Stea to interpret data from the surficial geology component of the TGI project.

Rob Naylor will devote approximately two-thirds of his time to the bedrock mapping component of the TGI project, where he will work closely with Peter Giles of the Geological Survey of Canada to complete mapping of NTS areas 11F/11 and 11F/14. The remainder of Rob's time will be directed to the division's Carboniferous Basins program. This year, Rob plans strategic Carboniferous mapping to take advantage of recent seismic surveys and new exposures. He will also participate in a project to assess the capacity of Nova Scotia's coal fields to sequester CO₂ (see summary of John Calder's activities).

Terry Goodwin will investigate geochemical variations in rocks, soils and waters throughout Nova Scotia. The HRM Geochemistry project is determining background geochemical data for soils and tills in the Halifax Regional Municipality, to provide baseline information for land-use planning. This year's field work will focus on the Dartmouth-Cole Harbour area. The Meguma Geochemistry project comprises sampling and analysis of vegetation, humus, soil, till, rocks and soil gas, and will result in a three-dimensional understanding of variances in geochemical characteristics. Terry will also begin a new project, Characterization of Acid Rock Drainage (ARD), which will use bedrock sampling and analyses to develop ARD characteristics for a variety of rock types in Nova Scotia. In addition, Terry will continue to investigate the distributions and environmental implica-

Exploration and Development Highlights for 2001

Junior mining companies and prospectors continue to be the driving force in Nova Scotia's mineral exploration. Collectively, they directed most of their recent efforts on a variety of industrial mineral commodities. Development and advanced exploration projects focused on kaolin-quartz (\pm mica), zeolites, gypsum, titanium, barite and aggregate. In addition, several projects concentrated on base- and precious-metal commodities.

Exploration expenditures are forecast at \$3.5 million for 2001, a favourable comparison to the 1999 and 2000 amounts of \$3.6 and \$3.7 million, respectively. This represents a halt to the decreasing trend since 1996, when exploration expenditures totalled \$6.9 million.

Mining Development

Georgia Pacific Corp. continued site preparation at its Melford surface gypsum mine in south-central Cape Breton Island. At the end of 2001, access roads were in place, initial stripping of overburden had been completed, and construction had commenced on mine buildings and other infrastructure. Production is expected to commence in 2002. The deposit has a combined proven and probable mineable reserve of 35 million tonnes of gypsum. Georgia Pacific will bring the new quarry into operation while phasing out its nearby gypsum mine at Sugar Camp, Inverness County.

Advanced Exploration

C₂C Zeolite Corporation has received all the necessary permits and has been issued a mining lease for its Tower View Property near Margaretsville on the North Mountain basalt flows in southern Nova Scotia.

Black Bull Resources Inc. has completed trenching, geophysical surveys (IP), diamond-drilling, and bulk sampling of a quartz zone, and sample testing on its Yarmouth quartz-kaolin project. The quartz-kaolin zone ranges

from 100 m to 200 m in width, exceeds 100 m in depth, and extends for 1.6 km. Black Bull conducted market research for the kaolin, quartz and muscovite from the deposit and has initiated design and engineering studies necessary to bring a quartz project into production.

Titanium Corporation Inc. completed a second phase of drilling at its titanium-bearing heavy mineral sands project on the Shubenacadie River in central Nova Scotia. An independent valuation report indicated a probable reserve of 330,941,945 tonnes of sand with an average heavy mineral grade of 1.94%. The company commenced pilot testing of bulk samples in partnership with the Minerals Engineering Centre at Dalhousie University in Halifax.

Exploration Projects

In December 2001, Atlantic Industrial Minerals Ltd. (AIM) announced plans to acquire the central block of shares of Lynx Minerals Inc. AIM reported that it intends to develop a mine and processing plant near the East Lake Ainslie barite deposit to supply barite to the oil and gas exploration industry in Atlantic Canada, and to other barite consumers in Eastern Canada.

3779751 Canada Inc. conducted diamond-drilling at the Strawberry Hill zone near the former Tangier Gold Mine on the Eastern Shore. The 12-hole drilling program was designed to test the distribution of auriferous veins, evaluate the potential for saddle reef veins, and correlate stratigraphy with the former gold mine.

True Metallic Inc. has completed a 14-hole drilling program at its Castle Frederick project in central Nova Scotia. Approximately 5500 m were drilled in 2000 and 2001. The company is evaluating the potential for paleoplacer gold in ancient stream channels within Carboniferous sedimentary rocks adjacent to gold-bearing rocks of the Meguma Group.

Kaoclay Resources Ltd. continued to evaluate the quality and extent of

kaolin and silica sand deposits in central Nova Scotia. The company completed bulk sampling, regional and detailed grid drilling, and shallow seismic surveying, and continued to evaluate various industrial applications for the kaolin.

Champlain Resources Inc. continues to evaluate the rare-metal potential of pegmatite and granitic rocks near the former East Kemptville tin mine in southwest Nova Scotia.

Exploration has recently been conducted on the Pine Brook barite deposit in central Cape Breton Island by Mercator Geological Services Ltd. The project, on the claims of George MacKay and Robert MacDonald, consisted of a 15-hole grid-drilling program to the west of and along strike from the previous open pit. The drilling confirmed results from earlier, widely spaced drillholes, and successfully brought more tonnage into the measured category.

Several companies are currently evaluating the viability of salt dome structures for potential underground gas storage, in light of recent gas production from the Sable Offshore Energy Project and the resurgence in offshore gas exploration in Nova Scotia. Statia Terminals Canada Incorporated completed a 2-D seismic survey and was considering additional geological and geophysical programs to obtain information about the salt deposit in Port Richmond, Richmond County, prior to an announcement on November 21, 2001, that Statia's assets were to be acquired by Kaneb Pipe Line Partners. Kaneb is the third largest independent liquids terminal operator in the United States. The acquisition of Statia's assets by Kaneb was announced in February 2002. Other companies evaluating geostorage potential in salt deposits include Intragaz and Company Limited Partnership, which is exploring in the McIntyre Lake and Kingsville areas of Cape Breton Island, and Geostorage Associates, which is exploring near Stewiacke in central Nova Scotia.

Mike MacDonald

From the Mineral Inventory Files

The Brazil Lake Albite-Spodumene Pegmatite

A interesting occurrence of albite-spodumene pegmatite at Brazil Lake, Yarmouth County, is currently being explored for its rare-metal potential. Pegmatites are very coarse-grained granitic rocks which form during the last stages as a granitic magma crystallizes. Pegmatites tend to contain unusual minerals made up of rare elements like Ta-Nb-Be-Sn-Rb-Cs-Mo-W-Li-F, which are not used when the common minerals that make up a granite (e.g. quartz, feldspar and mica) crystallize. As a result, these rare elements concentrate in the magma until the final stages of crystallization. By then, they have to come out of the magma in some form, and do so by either forming unusual minerals, or by escaping from the magma chamber dissolved in hydrothermal fluids. Pegmatites are referred to as late-stage or highly evolved granitic rocks, and albite-spodumene pegmatites are a sub-class known to be among the most evolved. Spodumene ($\text{LiAlSi}_2\text{O}_6$), formally known as lithium-aluminum pyroxene, is often used as a source of Li for the ceramics market, and is also keenly sought by mineral collectors.

In 1960, local residents discovered boulders and an outcrop of spodumene-bearing pegmatite adjacent to the Holly Road at Brazil Lake, a community approximately 25 km northeast of Yarmouth (Fig. 1). F. C. Taylor of the Geological Survey of Canada (GSC Memoir 349) mapped the site in 1967 and found one large pegmatite outcrop south of the road and two more to the north. He surmised that two parallel dykes of pegmatite occur within interbedded, highly deformed and metamorphosed schist, quartzite and metavolcanic rocks of the White Rock Formation. Recent geological mapping has shown that this area lies within the regional Deerfield Shear Zone, which may have played a role in localizing the pegmatite intrusions.

A 272 kg sample of Brazil Lake pegmatite was tested in 1971 at the Technical University of Nova Scotia. Grade (34.4% spodumene) and Li content (6-7.5% Li_2O) were favourable, but it was deemed that the Fe content (0.18-0.30%) of the spodumene was too high for market standards. Shell Canada Resources Limited carried out a mapping, sampling and mineralogical examination of the pegmatite in 1982, and made first mention of the presence of anomalous levels of Ta, Sn and Be. Shell also noted that the surrounding country rocks have a superimposed tourmaline and silica alteration halo.

The Department of Natural Resources drilled five holes (580 m) in the area of the two outcrops north of the Holly Road in 1993 (Fig. 1). These drill-holes showed that the dyke in that area is a single, sub-vertical, zoned pegmatite with a minimum strike length of 100 m and ranging from 10 to 25 m thick to a minimum depth of 75 m. A detailed mineralogical study indicated that the spodumene is generally associated with coarse- to fine-grained cleavelandite (a variety of albite) and a host of minor minerals including tantalite, cassiterite, garnet, tourmaline, rutile, epidote, lithiophilite, fillowite, amblygonite and cookeite.

In 1999, Gwalia Consolidated Limited of Australia, the world's largest Ta producer, sampled and analyzed all the pegmatite intersections in the Brazil Lake drill core. Their data returned interesting intersections of rare metals: for example, 113 ppm Ta_2O_5 over 18 m,

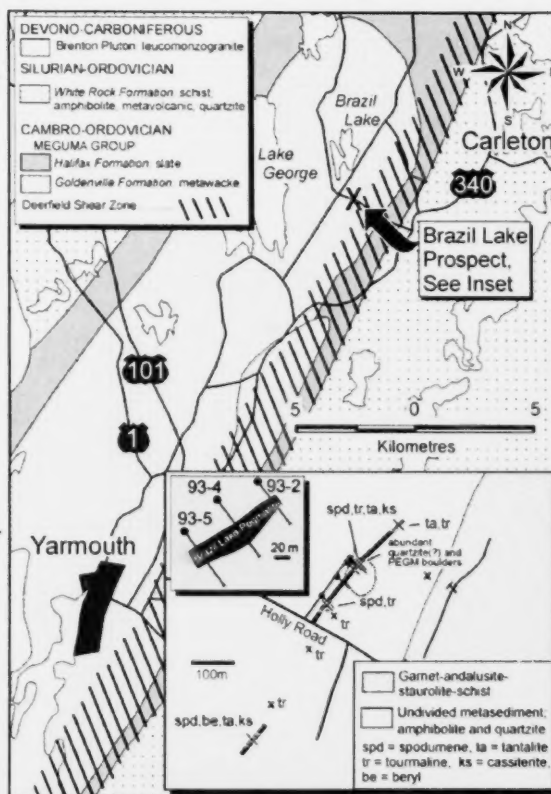


Figure 1. Geology map of the Yarmouth area. Inset shows the Brazil Lake pegmatite.

zones of BeO averaging up to 0.1% over 9 m, and sporadic Sn samples up to 1.8%. These results confirmed that the Brazil Lake property is a *bona fide* rare-metal exploration target.

The area has potential for other pegmatite intrusions. In 1982, Shell Canada noted several albite-spodumene pegmatite boulder fields and small outcrops in areas some distance from the original showing. All of these sites are spatially associated with the northeast-trending Deerfield Shear Zone (Fig. 1), suggesting that this fault zone has a high potential to host rare-metal deposits.

G. A. O'Reilly

Professional Status for Geoscientists

On April 22, 2002, Bill 117, the *Geoscience Profession Act*, received first reading in the Nova Scotia Legislature. The private member's bill is sponsored by Jim DeWolfe (MLA, Pictou East) and will bring legal status to the practice of professional geoscience.

The quest for legislative recognition of geoscientists began in 1994 when members of both the Association of Professional Engineers of Nova Scotia (APENS) and the Association of Professional Geoscientists of Nova Scotia (APGNS) approved the idea of combining both organizations under one piece of legislation. In 1996 and 2001, bills to combine APENS and APGNS under one act were introduced in the legislature but died on the order paper because of a lack of consensus among the constituent organizations. The current bill provides the legal means for geoscientists to organize themselves and regulate the practice of professional geoscience.

Generally speaking, all persons engaged in practicing geoscience in Nova Scotia will need to register and join APGNS. Everyone should read the bill to see how it may apply to them. Specific exemptions apply: for instance, all prospectors are exempted from the new act as long as they are working on their own claims and don't call themselves "geoscientists." The new legislation will finally establish a professional geoscience organization and will regulate the practice of professional geoscience in Nova Scotia.

You can track the progress of the legislation by checking the government web site at <http://www.gov.ns.ca/legislature/legc/>. Look for Bill 117. For more information please visit the Association of Professional Geoscientists of Nova Scotia web site (<http://www.apgns.ns.ca>).

Howard Donohoe

January - March Open Assessment Reports

Report Number	Claim Ref. Map	Licensee
AR ME 1987-290	11E/02A 11F/05B	Seabright Resources Limited
AR ME 1987-291	11E/05C	Lodestone Limited
AR ME 1987-292	11E/05C	Lodestone Limited
AR ME 1987-293	11E/05C	Lodestone Limited
AR ME 1988-423	1E/05C	Lodestone Limited
AR ME 1988-424	11E/05C	Lodestone Limited
AR ME 2000-2	11D/13A	Fisher, E
AR ME 2000-3	11E/04B	Anthony, R
AR ME 2000-5	11D/14C 11E/03B	Hudgins, A D
AR ME 2000-6	11F/04D	Golden Ace Mineral Explorations Limited
AR ME 2000-7	11F/14C	Isenor, G P
AR ME 2000-8	11E/04B	Dolbel, F D
AR ME 2000-9	21A/07B	Hayward, T
AR ME 2000-10	11F/04B	Oicle, G
AR ME 2000-11	11D/16C	Oicle, G
AR ME 2000-12	11D/16C	Oicle, G
AR ME 2000-13	11K/02C 11K/07B	Grant, S
AR ME 2000-14	11E/03B	Savage Resources Canada Limited
AR ME 2000-15	11E/03A	Savage Resources Canada Limited
AR ME 2000-16	11E/03B	Savage Resources Canada Limited
AR ME 2000-20	11E/03A	Savage Resources Canada Company
AR ME 2000-21	11F/14A	Sanderson, R
AR ME 2000-22	11E/03B 11E/03C	Geostorage Associates Partnership
AR ME 2000-23	11F/14C 11F/14D	Isenor, G P
AR ME 2000-24	11E/07B	Richman, J
AR ME 2000-25	21A/06A	Hooper, A D
AR ME 2000-26	11D/14C	DeBay, A
AR ME 2000-27	11K/01C	Mt Cameron Minerals Incorporated
AR ME 2000-28	11K/01B	Mt Cameron Minerals Incorporated
AR ME 2000-29	11K/01B 11K/01C	Mt Cameron Minerals Incorporated
AR ME 2000-30	11D/14A	Ellsin Resources Limited
AR ME 2000-31	11D/15B	Ellsin Resources Limited
AR ME 2000-34	21A/09B	Brooks, R
AR ME 2000-35	11F/05A 11F/05B	Schenkels, H
AR ME 2000-68	11D/14C	Dawn, H P
AR ME 2000-71	11E/02A	Gold'n Crystal Minerals
AR ME 2000-74	21H/01D	Geosearch
AR ME 2000-78	20O/16D	Burrill, H C
AR ME 2000-80	21H/08B	Reid, J S

Susan Saunders and Norman Lyttle

NSPA Plans Field Trip to the Cobequid Highlands

From May 30 to June 2, the Nova Scotia Prospectors Association (NSPA) will hold a field trip in the Cobequid Mountains. The object of the trip to familiarize prospectors with this part of Nova Scotia and its mineral occurrences. George O'Reilly and Howard Donohoe are organizing the trip, with the help of Ron Mills (DNR), Don Black and Avard Hudgins (local Truro prospectors and developers). Prior to the field trip, there will be a talk by Howard on May 15 about the geology and mineral deposits of the Cobequid Highlands.

The Cobequid Highlands represent about 2300 square kilometres of highland area underlain by Precambrian to Lower Carboniferous rocks. The rocks are exposed in elongated, east-west fault blocks. The faults are major breaks in the earth's crust and have been part of the region's history since the Devonian (approximately 420 million years ago - Ma) or earlier. Mountain building affected the area with folding and deformation in the Precambrian, Devonian and middle Carboniferous. Granite and gabbro were intruded episodically into the various fault blocks from approximately 620 Ma to 340 Ma.

The combination of deep, active faults and large volumes of gabbro and granite through time has offered the possibility of significant mineral deposits. The southern side of the Cobequids at Londonderry was the site of iron mining from 1860 to the early 1900s. The first underground barite mine in Canada, the Eureka Mine, was brought into production on the banks of the Bass River of Five Islands in the 1880s. Lead, zinc and copper occurrences are known in the Cobequid Fault zone, in older rocks north of the fault, and in younger rocks south of the fault. Barite and magnetite have been mined in the Bass River village area. Large blocks of the eastern Cobequids were prospected, mapped and drilled in an effort to locate the source of high-grade uranium seen in float during the 1970s.

Tectonically, the Cobequid Highlands are part of the Avalon Composite Terrane, which extends from north of

Boston through coastal Maine and southern New Brunswick, the Cobequid and Antigonish Highlands, to the Avalon Peninsula of Newfoundland. The Cobequid Fault has brought the Meguma Terrane (southern Nova Scotia) up against the Avalon during the Acadian Orogeny (mountain building time) and moved the two terranes again during the middle Carboniferous.

During the two days of field work, we will see the Londonderry iron ore district and look at the history of iron mining, examine several base metal showings and deposits, see magnetite and barite deposits, and generally become familiar with the rocks of the central Cobequid Highlands.

The headquarters for the trip will be the Elm River Park (902-662-3162), located on old route 2 near the Masstown exit of Route 104. Ten camping sites have been reserved so far, and the park has a central building that the NSPA can use for meetings, briefings, and communal cooking and partying. For non-campers, the Masstown Motel (902-662-2500) is offering special rates of \$48 including tax for a single and \$55 for a double. Seven rooms are reserved for the NSPA. More space is available at both the motel and the park. I suggest that you make reservations early. Please tell each location that you are with the Nova Scotia Prospectors Association.

Howard Donohoe

Reprinted from Pick, Pan and Shovel, April 2002.

PDAC 2002

The annual Prospectors and Developers Association of Canada (PDAC) convention provides a key opportunity to promote the mineral potential of Nova Scotia to a national and international audience. From 1997 through 2001, funds were provided by the Prospector Assistance Program to help Nova Scotia prospectors travel to this convention and promote their properties. Although this program expired in 2001, some residual funds were retained and 10 prospectors received travel assistance to attend the 2002 PDAC convention. Eight prospectors had booths in the Atlantic Canada Rock Room and two more held meetings with prospective companies. In addition, the Honourable Ernest Fage, Minister of Natural Resources, and five staff members from DNR attended the conference.

In a recent survey of various North American and worldwide jurisdictions by the Vancouver-based Fraser Institute, Nova Scotia ranked last in the category of mineral potential. Why is this? Does Nova Scotia have such low potential, or is this simply a perception? It was abundantly clear to the PDAC delegates who visited the Nova Scotia section of the Rock Room that

the province has tremendous mineral potential. Nova Scotia has a vibrant mining industry, built on a solid foundation of industrial minerals such as gypsum, salt, aggregate, barite, limestone, dolomite and peat. Recent gold production from the underground Dufferin gold mine is a positive development for vein-gold deposits in the Meguma Terrane, and there is growing interest in several past-producing gold districts in southern Nova Scotia. In addition, an impressive list of exploration projects targeting an array of commodities and deposit types attests to the mineral potential of the province. Programs are currently underway focusing on primary granite-hosted quartz and kaolin, sedimentary (i.e. secondary) kaolin and silica sand, basalt-hosted zeolites, titanium sands in an active river system, vein- and disseminated gold in turbidite sedimentary rocks, paleoplacer gold in terrestrial sedimentary rocks, and tantalum and other rare metals in peraluminous granitic rocks, to name a few.

Nova Scotia has a strong mineral potential and will continue to attract exploration in the future. Growth in the province's mineral industry will change any perceptions to the contrary.

Mike MacDonald

Solely Energy for Mining Society Annual Meeting in Baddeck

On June 6th and 7th, the Mining Society of Nova Scotia will hold its 115th annual meeting at the Inverary Inn, Baddeck. The technical program will explore the theme: "Energy – Preparing for the Future." Talks will provide a broad insight into the geological resource base, regulatory regime, use of technology, company activities, and industry association views. These presentations offer an opportunity to learn more about energy development and regulation in Nova Scotia.

Thursday Afternoon, June 6, 2002

1. Energy – Preparing for the Future, Howard Donohoe, DNR.
2. Canada-Nova Scotia Offshore Petroleum Board Operations, Speaker TBA, CNSOPB.
3. Nova Scotia's Energy Strategy – Seizing the Opportunity, Paul Taylor, Nova Scotia Petroleum Directorate.
4. Onshore Geology and Petroleum Potential, Robert Ryan, DNR.
5. Offshore Geology and Petroleum Potential, Robert Fensome and Chris Jauer, Geological Survey of Canada (Atlantic).

Friday Morning, June 7, 2002

1. Title TBA, Debra Walsh, Canadian Association of Petroleum Producers.
2. Engineering Challenges for Offshore Development, Ann Wilkie, CBCL Limited.
3. Deep Water Drilling, Don Warrick, Ocean Rig 2 AS.
4. El Paso Energy Corporation Operations, Speaker TBA, El Paso Energy.
5. Canadian Superior's Perspective on the Future, Mike Coolen, Canadian Superior Energy Inc.
6. Offshore Exploration Licenses near Cape Breton Island, Ed Carey, Public Review Commission.
7. Industrial Minerals for Petroleum-based Industries, Phil Finck, DNR.

Friday Afternoon, June 7, 2002

1. Surface Coal Resources in Nova Scotia, Don Jones, DNR.
2. Canadian Clean Power Coalition, Bill Richards, Emera Inc.
3. CO₂ Capture and Geological Storage, Frank Campbell, CANMET.
4. CBDC's Site Closure Plan, Stephen Locke, Public Works and Government Services Canada.
5. Mining Beyond the Limits: Steep Dip Highwall Mining Techniques, John Chisholm, Nova Construction Ltd.
6. Caterpillar Mining Systems: the Future, George Moubayed, Caterpillar Inc.

For more information visit the Mining Society web site (<http://www.msns.cim.org>). Use the web site to keep informed about the meeting and other Mining Society activities. You can also download an application form and apply for membership. The society will provide some great entertainment during the meeting. If you enjoy golf, you may wish to register in the golf tournament at the Bell Bay Golf Course, which begins at 9 am, Thursday, June 6. When making your reservations with the Inverary Inn at Baddeck (1-800-565-5660), please mention that you will be attending the Mining Society annual meeting.

Howard Donohoe

Special Note

DNR Staff Member Receives CIM Fellowship Award

Howard Donohoe has been awarded the CIM (Canadian Institute of Mining, Metallurgy and Petroleum) Fellowship Award. The award recognizes members who have distinguished themselves through outstanding contributions to the mining, metallurgical and petroleum industries. Up to 10% of the membership can be CIM Fellows. A CIM Fellow can place "FCIM" after his or her name when deemed appropriate.

Dates to Remember

May 27-29, 2002

Geological Association of Canada-Mineralogical Association of Canada Annual Joint Meeting, Saskatoon, Saskatchewan. For information please call Karen McMullin (306-966-5691).

June 6 and 7, 2002

Mining Society of Nova Scotia, Annual Meeting, Inverary Inn, Baddeck, N. S. For more information contact Sam Schwartz, 2nd V. P. of the Mining Society of Nova Scotia, at 902-563-2467.

June 11, 2002

Geological tour of Peggys Cove, starting at the deGarth sculpture. Part of DNR's *Parks are for People* program. Call 902-424-4321 or 902-424-5832 for more information.

July 6, 2002

Geological tour of Spicers Cove, Cape Chignecto Provincial Park. Part of DNR's *Parks are for People* program. For more information call the Fundy Geological Museum (902-254-3814).

August 16-18, 2002

Nova Scotia Mineral and Gem Show, Parrsboro, Nova Scotia. For more information contact the Fundy Geological Museum (902-254-3814).

